

**REMARKS**

At the time of the outstanding office action, claims 1-11 were pending. Claims 5-11 have been withdrawn from consideration. These claims have now been cancelled. Applicant reserves the right to file a divisional application as to the cancelled and non-elected claims. New claims 12-15 have been added. Thus, claims 1-4 and 12-15 remain pending.

The examiner has objected to the abstract because it contains more than one paragraph. Applicant has submitted a new abstract in the substitute specification filed concurrently herewith. The new abstract is a single paragraph. Moreover, the new abstract describes of the method and cancels the language concerning the apparatus implementation.

A substitute specification has been submitted in order to improve the grammar of the original application as filed. No new matter has been added. For convenience of the examiner, a mark-up copy of the substituted specification showing the changes made thereto is also enclosed.

Claims 1-4 stand rejected under 35 U.S.C. § 112, second paragraph. Applicant has amended claims 1-4 in order to remove the various grounds of objection set forth by the examiner on pages 2 and 3 of the outstanding office action. It is submitted that applicant's claims now fully comply with the provisions of 35 U.S.C. § 112.

Claims 1-4 stand rejected under 35 U.S.C. § 102(e) as being anticipated by each of Weitschies (6,027,946), NTT (JP63090765A), and Koch (6,123,902). The examiner's rejections are respectfully traversed.

It is important to recognize that in accordance with applicant's invention, the magnetic material label which is magnetized by the magnetic field is detected by the SQUID which detects a variation of the strength of the magnetic field which is at a

right angle to the magnetic field which is utilized to magnetize the magnetic material label. Thus, as shown in applicant's figure 1, the magnetic field that is utilized to magnetize the magnetic material label is horizontal in the direction of the arrow A. This external magnetic field A is utilized to magnetize the magnetic material label shown by the heavy arrow within the analyte 2. However, the SQUID has a coil 3 which is positioned to detect the magnetic field which is perpendicular to the horizontal direction, that is, perpendicular to the direction A of the applied magnetic field. Utilizing this arrangement, the SQUID is able to detect the variation of the magnetic field caused by the magnetic material label and free from any influence of the applied magnetic field, thus rendering the SQUID much more sensitive to the changes in magnetic field of the magnetic material label. None of the references cited by the examiner teach nor suggest this highly important limitation of applicant's claims. In particular, applicant's independent claim 1 recites that the magnetic material label which is magnetized by the magnetic field is detected by the SQUID which detects a variation of the strength of a magnetic field which is at a right angle to the magnetic field which magnetizes the magnetic material label. No such teaching is found in any of the references applied by the examiner.

It is pointed out that in order for a reference to be anticipatory under the provisions of 35 U.S.C. § 102, the reference must disclose each and every limitation of the claims. As indicated above, a key limitation of applicant's independent claim is not shown in any of the applied prior art and thus, none of these applied prior art references may be utilized to anticipate applicant's claims. The rejections under 35 U.S.C. § 102 must therefore be withdrawn.

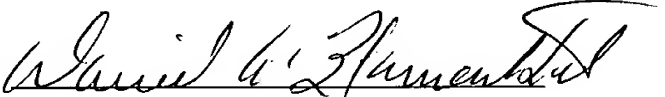
New claims 12-15 have been added. These new claims parallel claims 1-4 but are presented in a more conventional format. Among these claims, claim 12 is the sole

independent claim. Claim 12 recites labeling an analyte with a magnetic material label, magnetized the magnetic material label by applying a magnetic field along a first direction and, using said SQUID, detecting a variation of strength of a magnetic field from the magnetized magnetic material label along a second direction which is perpendicular to the first direction. As indicated above, none of the prior art references teach these limitations of applicant's invention and thus, applicant's invention as recited in newly-submitted independent claims 12-15 is patentable.

It is submitted that the application is now in condition for allowance and an early indication of same is earnestly solicited.

Respectfully submitted,

Date

By 

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Keiji ENPUKU

Title: A METHOD FOR AN  
IMMUNOASSAY WITH A  
MAGNETIC LABEL

Appl. No.: 09/621,341

Filing Date: 7/21/00

Examiner: Pensee T. Do

Art Unit: 1641

**MARKED-UP COPY OF AMENDMENT AND REQUEST FOR RECONSIDERATION**  
**UNDER 37 C.F.R. § 1.111**

Commissioner for Patents  
Box AF  
Washington, D.C. 20231

Sir:

In reply to the Office Action dated April 10, 2002, please amend the above-identified application as follows:

**In the Specification:**

Applicant has made numerous changes to the written description in order to improve the readability thereof. Submitted herewith is a substitute specification containing the changes made to the written description and abstract. No new matter has been added. Also enclosed is a mark-up copy of the changes made to the substitute specification. The claims do not appear in the substitute specification and are treated separately below.

**In the Claims:**

Please cancel claims 5-11. Applicant reserves the right to file a divisional

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DeltaView comparison of iManage://laxdms1/LACA/557462/1 and  
iManage://laxdms1/LACA/557462/2. Performed on 10/09/02.

application on the non-elected claims.

Please amend claims 1-4 as follows:

1. (Amended) A method for immunoassay with ~~magnetized label and SQUID, which comprising a magnetic material labelled a Superconducting Quantum Interference Device which comprises the following processes;~~process:

(1) ~~an analyte is labeled with a magnetic label to detect an antigen-antibody reaction~~is labelled with said magnetic material label,

(2) the magnetic material label is magnetized by a magnetic field,

(3) the ~~magnetized~~ magnetic material label magnetized by the magnetic field is detected by a ~~SQUID~~the Superconducting Quantum Interference Device which ~~detect~~detects a variation of strength of a magnetic field ~~having~~which is at a right angle to the magnetic field which magnetizes the magnetic material label.

2. (Amended) A method mentioned in claim 1, wherein said magnetic field ~~for magnetization~~to magnetize the magnetic material label used in step (2) is a static magnetic field.

3. (Amended) A method mentioned in claim 1, ~~said SQUID~~wherein said Superconducting Quantum Interference Device detects ~~variation~~variations of the strength of the magnetic field ~~occurred~~which occurs by moving the analyte labeled by the magnetized magnetic material label.

4. (Amended) A method mentioned in claim 1, wherein the analyte moves parallel to the magnetic field ~~for magnetization~~which magnetizes the magnetic material label.